

PARTS AND SERVICE MANUAL



1970 SKI-DADDLER SNOWMOBILES

MARK VI [SD15M21A]

MARK XX [SD15M11A]

MARK XX [SD15M22A]

MARK XX [SD15M23A]

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INTRODUCTION

This manual has been prepared to provide all authorized AMF Ski-Daddler Dealers, Distributors and technicians with the instructions necessary to service and maintain the following 1970 AMF Ski-Daddler snowmobiles.

Model Designation	Engine
Mark VI (SD15M21A)	Hirth 171R 634cc
Mark XX (SD15M11A)	JLO L-295R
Mark XX (SD15M22A)	AMF 399BP
Mark XX (SD15M23A)	AMF 439BP

This manual is presented in two sections. The first section, Maintenance, provides the instructions necessary for sled maintenance and service while the second section, the Illustrated Parts List is provided to assist in the identification of all major assemblies and component parts.

For engine maintenance, refer to the vendor manual for the particular engine or the AMF Engine Maintenance Manual issued for all AMF engines.

If the information in this manual is not applicable to all models, the exceptions will be noted and the correct information for the particular model will be given.

PREDELIVERY INSTRUCTIONS

The 1970 Ski-Daddlers are shipped completely assembled except for the windshield assembly and the ski assembly.

These assemblies, plus the attaching hardware will be found in the shipping carton. Carefully open the carton and immediately inspect the equipment for any damage or missing items.

Install Ski Assembly

- Remove the locknut and screw at the spring mounting bracket (figure 1).
- Place the spindle pad in the spring mounting bracket with the thicker section and the directional arrow on the pad pointing forward. NOTE: The plastic bag containing the spindle pad will be found in the storage compartment.
- Install the ski assembly by securing the spring mounting bracket and spindle pad to lower end of

spindle tube assembly as shown in figure 1. Apply 30 foot-pounds torque to the locknut. Do not over-tighten bolt as the ski assembly should float freely on the spindle.

- Repeat Install Ski Assembly procedures for opposite ski.

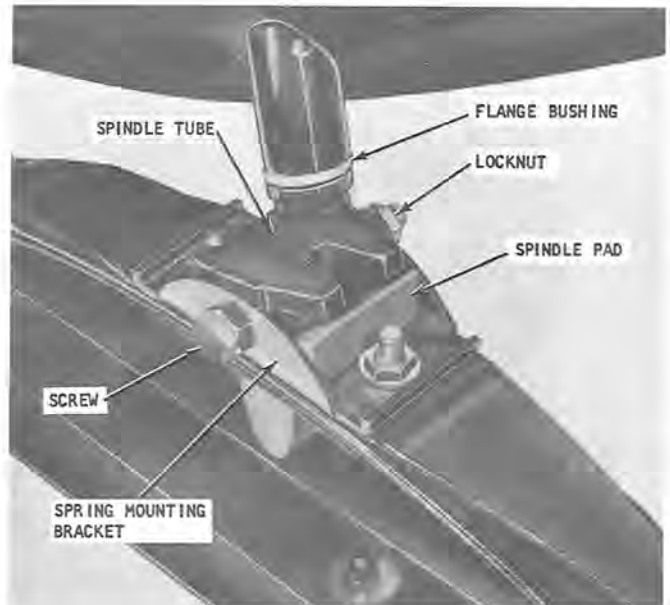


Figure 1

NOTE: Properly installed skis should toe out 0- to 1/2-inch at the front end (see figure 2) and should be symmetrical about the centerline of the sled. If alignment is necessary, refer to the Steering and Ski Alignment procedures.

Install Windshield Assembly

- Remove the screws securing the left- and right-hand mounting strips to the hood. Remove the mounting strips.
- Remove the protective cover from the windshield. Place the windshield in position on the hood assembly. Replace the mounting strips as shown in figure 2.
- Using the original screws, loosely secure the mounting strips and windshield to the hood assembly starting at the center and working to the sides.
- Engage the ends of the mounting strips in the trim strip on the windshield and then tighten the screws, again starting at the center and working to the sides. NOTE: Check mounting strips for sharp edges or corners. Use a fine tooth file to smooth all edges and corners.

AMF PREDELIVERY INSTRUCTIONS



Figure 2

Fuel Mixture Instructions

WARNING

Never fill the gasoline tank while the engine is hot. Wipe off any spilled gasoline before attempting to start engine.

The correct oil-to-gasoline ratio is 20:1 (20 parts regular gasoline to 1 part oil). Too much oil will cause carbon deposits. Too little oil or a poor mix will cause insufficient lubrication and possible engine damage.

IMPORTANT: Gasoline and oil should be mixed at temperatures above zero. At temperatures below zero, gas and oil mix with difficulty.

Fuels containing additives are not recommended for use in Ski-Daddler engines. For mixing with gasoline, use only oil that is recommended for use in air-cooled, 2-cycle engines such as an AMF oil or an equivalent good grade of SAE 30 or 40 non-detergent motor oil.

IMPORTANT: Some outboard motor oils contain a detergent that works well in outboard motors that operate at much lower temperatures because they are water cooled. However, the detergents may cause spark-plug fouling in the air-cooled engines used on your Ski-Daddler.

Use a mixture of gasoline and oil as shown in Fuel Mixture Chart, figure 3. Never use gasoline left over from the summer or previous winter.

Mix the gasoline and oil thoroughly in a clean container kept for this purpose only. The best way to ensure a good mix is to pour the oil into the empty container and then add a small amount of gasoline and mix thoroughly. Then add additional amounts of gasoline as shown on the Fuel Mixture Chart. Fill Ski-Daddler gas tank from this separate container of mixed fuel. Use a funnel with a fine-screen strainer when filling the tank. The gas cap is located under the gas lid and hinge assembly.

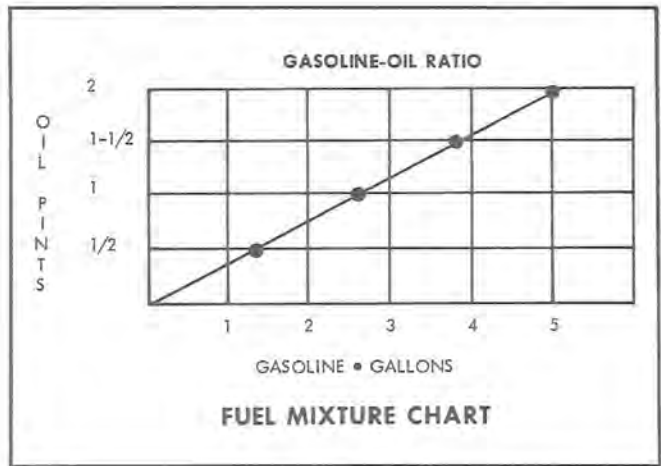


Figure 3

Lubrication

Refer to the lubrication chart for location of grease fittings, type of lubricant and frequency.

PART	LOCATION	TYPE OF LUBRICATION	FREQUENCY
Steering spindles	Grease zerk on spindle housings	Low-temperature grease	20 hours
Drive chain	Chain case housing	No. 2 Lithium bearing grease	20 hours
Bogie wheels	Grease zerk in center of bogie wheel	Low-temperature grease	20 hours
Sprocket bearings	Rear sprockets	No. 2 Lithium bearing grease	40 hours

LUBRICATION CHART

SERVICE AND REPAIR

Hood Removal and Installation

- To remove the hood and headlight assembly, disconnect the hood and the sled wiring harness at the quick-disconnect below the console on the right-hand side of the sled. Release the hood latch assemblies and then remove the hood and headlight assembly by lifting rear section first.

- To install the hood and headlight assembly, place the hood in position on the sled so that the forward hood clip and the bottom edge of the hood engages the clips along the inside edge of the bumper strip.

- Engage the left- and right-hand latch assemblies to secure the hood to the main frame.

- Connect the sled wiring harness to the hood wiring harness at the quick-disconnect below the console on the right-hand side of the sled.

Hood Assembly Repair

AMF Fiberglass Repair Kits are available through your authorized AMF Distributor. For large repairs, order AMF Fiberglass Repair Kit No. 1510693. Smaller repairs can be made with Repair Kit No. 1510765. Paint all repaired areas on the hood using AMF-Orange color paint available in easy-to-use spray container, AMF Part No. 1510828. Follow the instructions in the kit when making repairs.

Replace Lamp Assemblies

Headlight. To replace the headlight lamp assembly, simply raise the headlight assembly, remove the screws securing the cover assembly and remove

the cover assembly. Remove the defective headlight and replace with new lamp assembly. See illustrated parts list section for correct part numbers.

Taillight. Remove taillight lens and cover to expose the taillight bulbs. Remove the defective bulb and replace with a new bulb. See illustrated parts list section for correct part numbers.

Steering and Ski Assembly Alignment

Good steering ability requires that the skis be properly set and aligned with the sled body when the steering handle is placed in the straight-ahead position. To determine that the skis are properly aligned, measure the distance between the inside edges of the skis at the front end and at the rear. Properly aligned skis should toe out 0- to 1/2-inch maximum at the front. Therefore, the overall measurement at the front end of the skis should be 1/2 inch greater than at the rear. If the skis or steering mechanism are not properly set, adjust as follows.

- Place steering handle in a straight-ahead position.

- Remove the hood assembly.

- Remove the bolt (1, figure 4), two spacers (2), bottom spacer and locknut securing the rod end bearing (3) to the spindle arm.

- Loosen the jam nuts (4) securing both rod end bearings (3) to the tie rod (5).

NOTE: If both skis need adjustment, repeat procedure for the opposite ski.

NOTE: During reassembly, apply proper torque to the clutch bolt as shown in figure 6.

- Reassembly is the reverse of removal. Perform variable-speed drive belt adjustment and drive clutch alignment procedures.

Drive Clutch Alignment

- Remove the hood and headlight assembly. Refer to Hood Removal and Installation.

CAUTION

Always disconnect spark plug wires before working on the engine or drive elements.

- Remove the clutch guard.
- Loosen the engine holddown nuts securing the engine supports to the engine mount straps as illustrated in figure 6.
- Place a straightedge on the fixed face of the drive clutch and move the engine until the offset between the straightedge and the front and rear edges of the driven clutch is as shown in figure 6. Rotate driven clutch 90-degrees and repeat procedure.
- Tighten engine holddown nuts and recheck alignment. Apply 25 foot-pounds torque when tightening the engine holddown nuts.

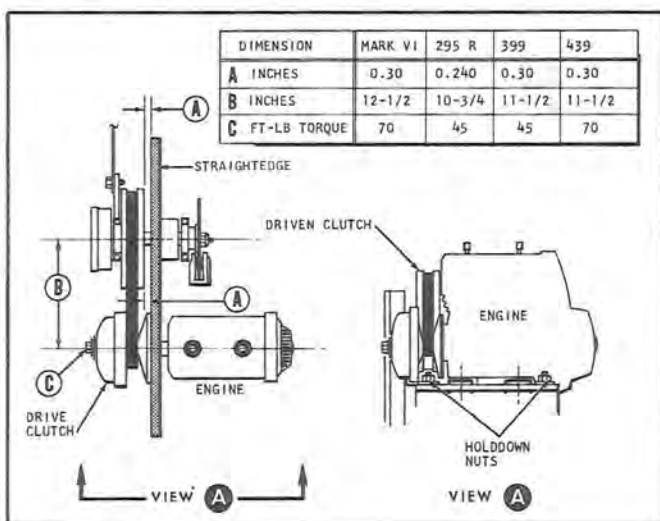


Figure 6

To Remove Driven Clutch

NOTE: The procedures required to remove the driven clutch are the same as those described in paragraph To Remove Variable-Speed Drive Belt.

To Remove Brake Assembly

- Remove hood and headlight assembly. Refer to Hood Removal and Installation.

CAUTION

Always disconnect the spark plug wires before working on the engine or drive elements.

- Disconnect brake cable (8, figure 7) at brake mounting bracket (9) and at brake actuating lever (3).
- Remove the two bolts and locknuts securing the mounting bracket to the driven clutch mounting.
- Remove the brake assembly.
- Installation procedures are the reverse of removal. Refer to Brake Adjustment procedures.

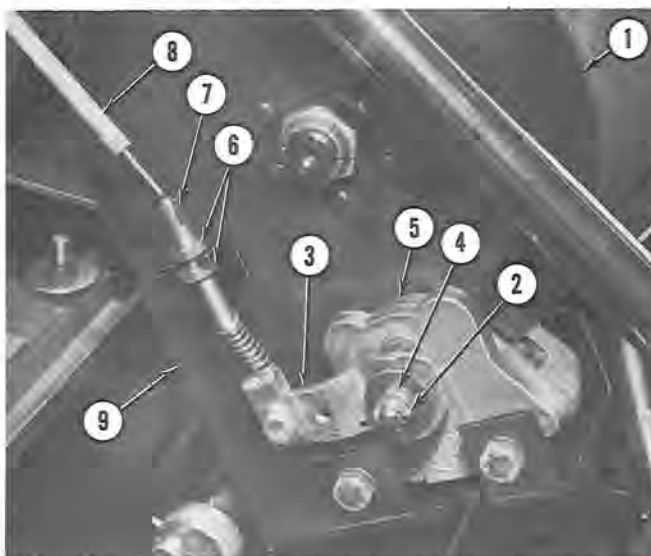


Figure 7

Brake Adjustment

CAUTION

Always disconnect spark plug wires before working on the engine or drive elements.

- To adjust the brake pads (5, figure 7) to the disk (1), remove the catter pin (2) and tighten or loosen the castle nut (4) as required to permit the brake pads (5) to just clear the brake disk. Reinstall the catter pin. To adjust for excessive play in brake cable or lever position, loosen jam nuts (6) and move brake housing (7) as required. Tighten jam nuts.

To Remove Carburetor— Mark VI and Mark XX 295 only

CAUTION

Always disconnect spark plug wires before working on the engine or drive elements.

- Loosen the throttle control cable adjustment screw and release cable. On Mark VI only, release throttle control linkage at the carburetor.
- Release the throttle extension spring and hook at the carburetor throttle control lever on the Mark XX 295 only (see figure 8).
- Release the hose clamp and disconnect the impulse line at the carburetor. Wipe up any spilled gasoline immediately.
- Release the tank-to-carburetor gas line. Wipe up any spilled gasoline immediately.
- Remove the locknuts securing the carburetor to the carburetor adapter and remove the carburetor.

NOTE: Do not damage gaskets when removing carburetor.

- Installation is the reverse of removal. Adjust carburetor as described in Carburetor Adjustment procedures.

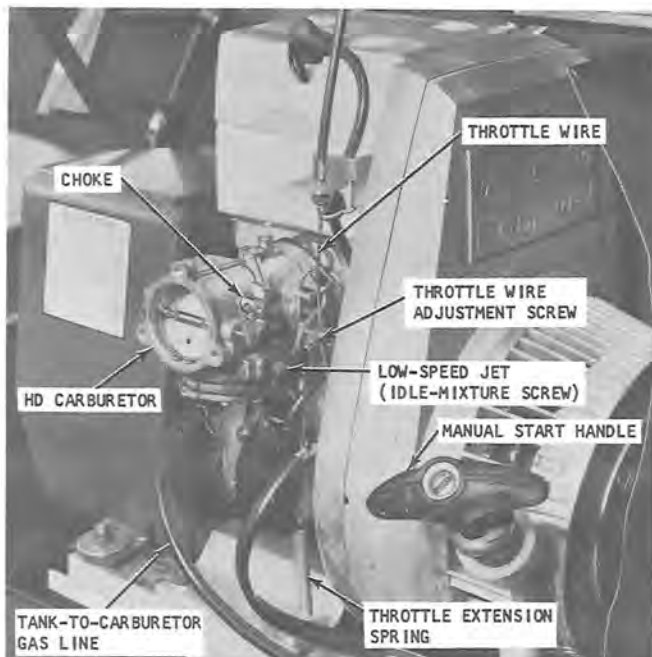


Figure 8

To Remove Carburetor— Mark XX 399 and 439 only

CAUTION

Always disconnect spark plug wires before working on the engine or drive elements.

- Release the hose clamps and disconnect the tank-to-carburetor gas line (figure 9) at the carburetor. Wipe up any spilled gasoline immediately.
- Remove the locknut securing the throttle arm screw to the throttle arm.

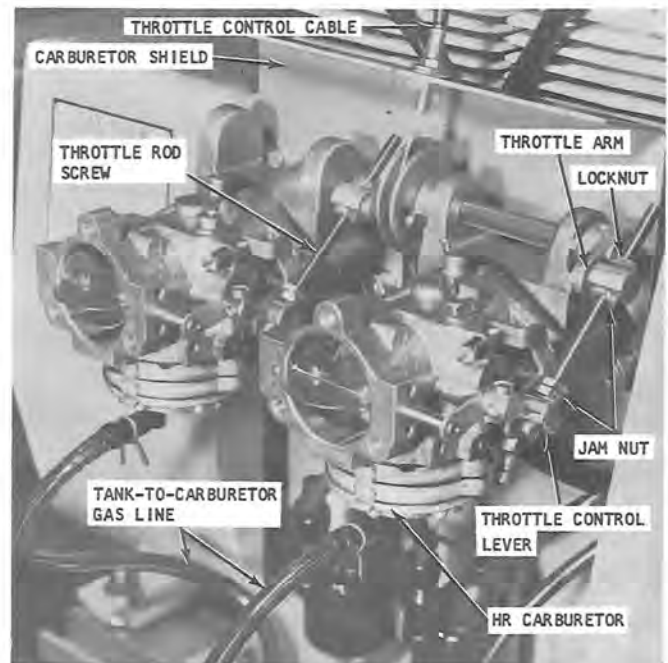


Figure 9

IMPORTANT: Before loosening the jam nuts, note the space between the bottom jam nut and the throttle control lever. This space must be maintained during reassembly.

- Loosen the jam nuts between the throttle arm and the throttle control lever and remove the throttle rod screw.
- Remove the jam nut and lockwashers securing the carburetor to the intake manifold and remove the carburetor.
- Installation is the reverse of removal except that the throttle rod screw must be inserted through the throttle control lever and into the throttle arm

sufficiently to take up the play in the throttle control lever.

- Adjust carburetor as described in carburetor adjustment procedures.

Carburetor Adjustment

When adjusting the carburetor, best results will be obtained if the adjustments are made on a warm engine. During carburetor adjustments, **DO NOT FORCE ADJUSTMENT SCREWS INTO SEATS.**

- **TO ADJUST CARBURETOR** – Close the high-speed jet as shown in figure 10 (**DO NOT FORCE**). Then open as indicated in the carburetor adjustment chart, figure 11 for the particular model Ski-Daddler.

- Turn the low speed jet (idle-mixture screw) as shown in figure 10 all the way in (**DO NOT FORCE**), then open as indicated in figure 11 for the particular model sled. This adjustment controls the mixture at idling speeds. A lean idle mixture will result in poor acceleration.

Keep the idle speed slower than the clutch engaging speed by adjusting the idle-speed screw. **NOTE:** Do not use the low-speed jet to adjust for idle speed.

Throttle Plate Adjustment, HD Carburetor

Figure 8 shows the throttle-wire adjustment screw used on all Mark VI and Mark XX 295 series sleds. If the throttle plate fails to open completely when the throttle control lever is depressed, loosen the throttle-wire adjustment screw and readjust the wire as required to fully open the throttle.

Throttle Plate Adjustment, HR Carburetor

Set the choke controls (figure 10) to off-choke position. This will permit inspection of the throttle control plate located inside the carburetor. Check to ensure that both throttle plates are in the fully open position when the throttle control is depressed. To adjust the throttle control plate, proceed as follows:

- Loosen the locknut and jam nut securing the throttle rod screw to the throttle arm.

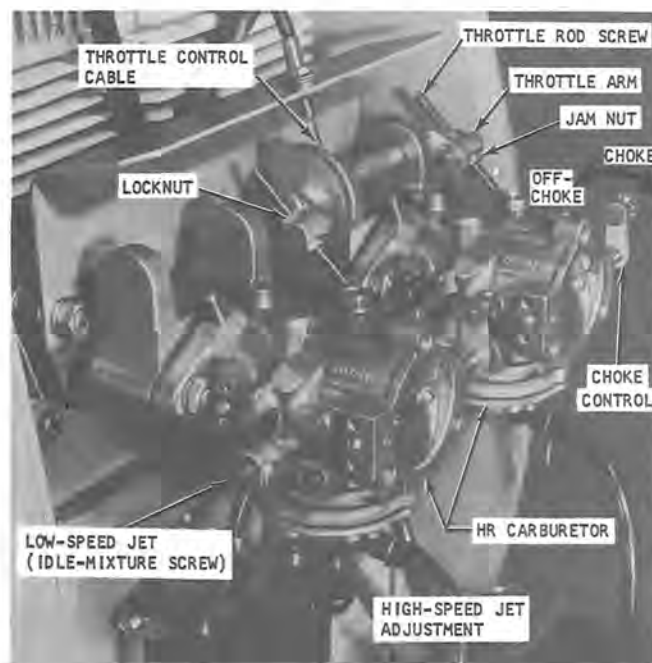


Figure 10

SKI-DADDLER MODEL	CARBURETOR	CARBURETOR ADJUSTMENT	
		HIGH-SPEED JET (TURNS)	LOW-SPEED JET (TURNS)
MK VI	Tillotson HD Carburetor	$1\frac{1}{8} \begin{smallmatrix} + \\ - \\ 0 \end{smallmatrix} \frac{1}{8}$ Open	$1\frac{1}{8} \begin{smallmatrix} + \\ - \\ 0 \end{smallmatrix} \frac{1}{8}$ Open
MK XX 399 and 439	Tillotson HR Carburetor	$2\frac{1}{4} \begin{smallmatrix} + \\ - \\ 0 \end{smallmatrix} \frac{1}{4}$ Open	$1\frac{1}{4} \begin{smallmatrix} + \\ - \\ 0 \end{smallmatrix} \frac{1}{8}$ Open
MK XX 295	Tillotson HD Carburetor	$1\frac{1}{8} \begin{smallmatrix} + \\ - \\ 0 \end{smallmatrix} \frac{1}{8}$ Open	$\frac{3}{4} \begin{smallmatrix} + \\ - \\ 0 \end{smallmatrix} \frac{1}{8}$ Open

Figure 11

- Turn the throttle rod screw as required to adjust the throttle control plate to the fully open position when the throttle control is depressed.

- Tighten the locknut and jam nut at the throttle arm (figure 10) to secure the throttle rod screw.

To Remove Engine and Support Assembly— Mark VI only

- Remove the hood and headlight assembly. Refer to Hood Removal and Installation.

CAUTION

Always disconnect the spark plug wires before working on the engine or drive elements.

- Remove the drive clutch. Refer to paragraph To Remove Drive Clutch.

NOTE: Figure 5, Illustrated Parts List section of this manual contains a detailed exploded view of the engine and support assembly showing all attaching hardware. For engine maintenance instructions, refer to the engine manual.

- Loosen the flexible tube clamps securing the muffler exhaust tubes to the engine exhaust manifold and release the exhaust tubes.

- Disconnect the throttle control cable and remove the carburetor as described in paragraph To Remove Carburetor.

- Disconnect the wire leads at the engine.

- Remove the bolts and washers securing the engine mounting frame to the main frame.

- Lift the engine until the engine mounting frame clears the shock mounts and remove the engine toward the rear of the sled.

- Remove the bolts and washers securing the mounting frame to the engine base and remove the mounting frame. NOTE: During reassembly, the mounting frame must be secured to the engine base before reinstalling the engine.

- Installation procedures are the reverse of removal.

To Remove Engine and Support Assembly— Mark 295 only

- Remove the hood and headlight assembly. Refer to Hood Removal and Installation.

CAUTION

Always disconnect the spark plug wire before working on the engine or drive elements.

- Remove the drive clutch. Refer to paragraph To Remove Drive Clutch.

NOTE: Figure 6, Illustrated Parts List section of this manual contains a detailed exploded view of the engine and support assembly showing all attaching hardware. For engine maintenance instructions, refer to the engine manual.

- Loosen the flexible tube clamp securing the muffler exhaust tube to the engine exhaust manifold and release the exhaust tube.

- Disconnect the throttle control cable and remove the carburetor as described in paragraph To Remove Carburetor.

- Disconnect the wire lead at the engine.

- Remove the locknuts and washers securing the engine and engine mounting straps to the main frame. During reassembly, tighten the locknuts sufficiently to allow a 5/16-inch clearance as shown in figure 12.

- Lift the engine until the mounting straps clear the carriage bolts and shock mounts. Remove the unit toward the rear of the sled. NOTE: Do not remove the carriage bolts, shock mounts or bushings unless necessary for replacement.

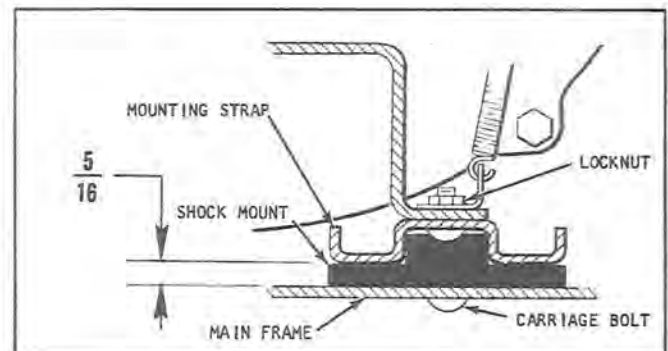


Figure 12

WIRING DIAGRAM

IARK XX 399CC (SD15M22A)

IARK XX 439CC (SD15M23A)

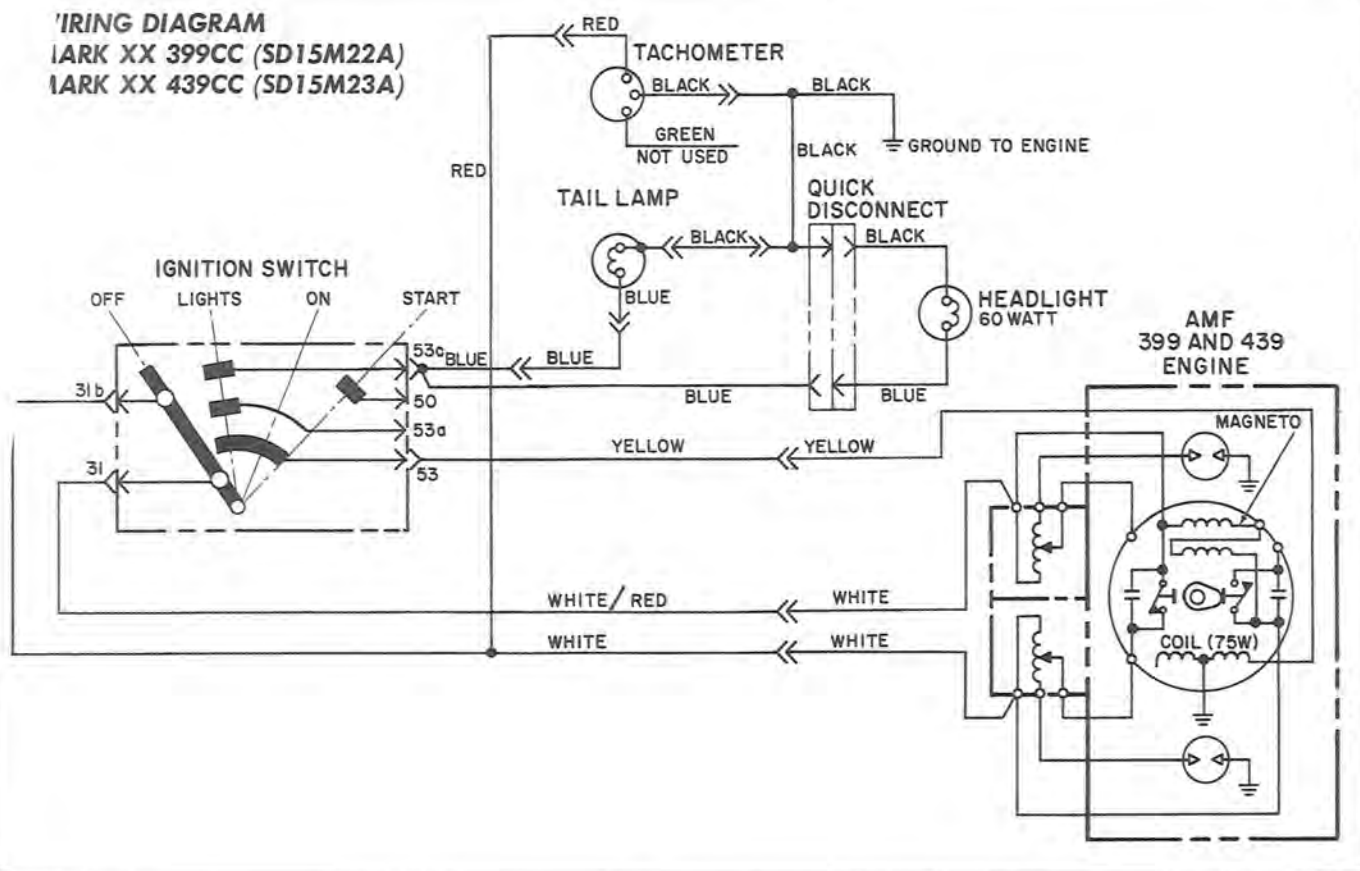


Figure 20

- Turn the throttle rod screw as required to adjust the throttle control plate to the fully open position when the throttle control is depressed.

- Tighten the locknut and jam nut at the throttle arm (figure 10) to secure the throttle rod screw.

To Remove Engine and Support Assembly— Mark VI only

- Remove the hood and headlight assembly. Refer to Hood Removal and Installation.

CAUTION

Always disconnect the spark plug wires before working on the engine or drive elements.

- Remove the drive clutch. Refer to paragraph To Remove Drive Clutch.

NOTE: Figure 5, Illustrated Parts List section of this manual contains a detailed exploded view of the engine and support assembly showing all attaching hardware. For engine maintenance instructions, refer to the engine manual.

- Loosen the flexible tube clamps securing the muffler exhaust tubes to the engine exhaust manifold and release the exhaust tubes.

- Disconnect the throttle control cable and remove the carburetor as described in paragraph To Remove Carburetor.

- Disconnect the wire leads at the engine.

- Remove the bolts and washers securing the engine mounting frame to the main frame.

- Lift the engine until the engine mounting frame clears the shock mounts and remove the engine toward the rear of the sled.

- Remove the bolts and washers securing the mounting frame to the engine base and remove the mounting frame. NOTE: During reassembly, the mounting frame must be secured to the engine base before reinstalling the engine.

- Installation procedures are the reverse of removal.

To Remove Engine and Support Assembly— Mark 295 only

- Remove the hood and headlight assembly. Refer to Hood Removal and Installation.

CAUTION

Always disconnect the spark plug wire before working on the engine or drive elements.

- Remove the drive clutch. Refer to paragraph To Remove Drive Clutch.

NOTE: Figure 6, Illustrated Parts List section of this manual contains a detailed exploded view of the engine and support assembly showing all attaching hardware. For engine maintenance instructions, refer to the engine manual.

- Loosen the flexible tube clamp securing the muffler exhaust tube to the engine exhaust manifold and release the exhaust tube.

- Disconnect the throttle control cable and remove the carburetor as described in paragraph To Remove Carburetor.

- Disconnect the wire lead at the engine.

- Remove the locknuts and washers securing the engine and engine mounting straps to the main frame. During reassembly, tighten the locknuts sufficiently to allow a 5/16-inch clearance as shown in figure 12.

- Lift the engine until the mounting straps clear the carriage bolts and shock mounts. Remove the unit toward the rear of the sled. NOTE: Do not remove the carriage bolts, shock mounts or bushings unless necessary for replacement.

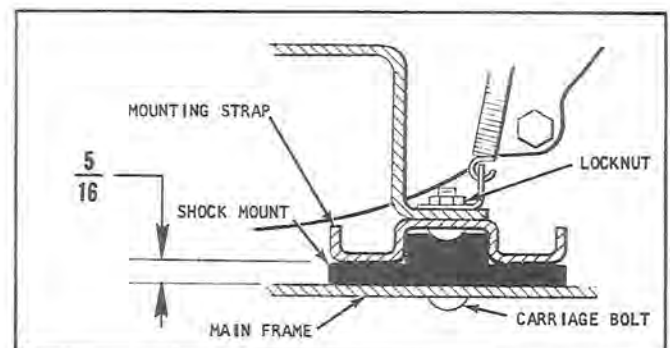


Figure 12

- Remove the bolts and washers securing the engine base and mounting straps to the engine. NOTE: During reassembly, the mounting strap and engine base must be secured to the engine before installing the engine on the sled. Apply Loc-Tite to the bolt threads.

- Installation procedures are the reverse of removal.

To Remove Engine and Support Assembly – Mark XX 399 and 439 only

- Remove the hood and headlight assembly. Refer to Hood Removal and Installation.

CAUTION

Always disconnect the sparkplug wires before working on the engine or drive elements.

- Remove the drive clutch. Refer to paragraph To Remove Drive Clutch.

NOTE: Figure 7, Illustrated Parts List section of this manual contains a detailed exploded view of the engine and support assembly showing all attaching hardware. For engine maintenance instructions, refer to the engine manual.

- Release the springs securing the muffler exhaust tubes to the engine exhaust manifold and release the exhaust tubes.

- Disconnect the throttle control cable at the throttle actuator and remove the carburetors as described in paragraph To Remove Carburetor.

- Remove the bolts securing the muffler bracket to the engine. Remove locknut that secures the heat shield and engine mounting strap to the main frame and remove the heat shield and muffler.

- Disconnect the engine wiring harness at the engine.

- Remove the locknuts, spacers and washers securing the engine mounting straps to the main frame. Remove the engine, engine base and mounting straps as a unit. During reassembly, tighten the locknuts sufficiently to allow a 5/16-inch clearance as shown in figure 12.

NOTE: Do not remove the carriage bolts, shock mounts or bushings unless necessary for replacement.

- Remove the bolts and washers securing the engine base and mounting straps to the engine. During reassembly, apply Loc-Tite to the bolt threads.

- Installation is the reverse of removal. NOTE: When replacing the engine, remove the starter cover plate from the new engine to permit installation of the muffler bracket.

To Remove Gas Tank

- Remove the hood and headlight assembly. Refer to Hood Removal and Installation.

CAUTION

Always disconnect spark plug wires before working on the engine or drive elements.

- Check gas cap and indicator assembly to be certain tank is empty, or nearly empty.

- Remove the gas cap and indicator assembly (1, figure 13).

- Remove the bolts (3) and washers securing the gas spill chute (2) to the main frame and remove the gas-spill chute.

- Disconnect the tank-to-carburetor gas line (6) at the gas tank outlet fitting (5). Wipe up any spilled gasoline immediately.

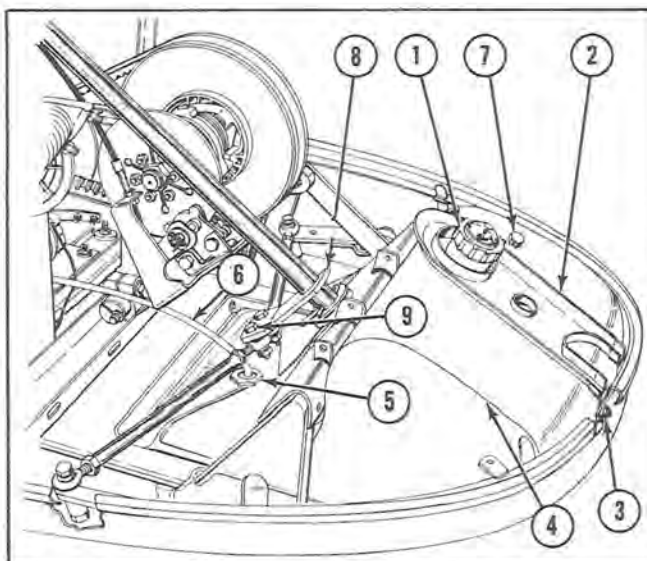


Figure 13

- Remove the gas tank (4) by carefully sliding the tank up and away from the main frame. **IMPORTANT:** Do not damage the gas tank outlet (5) when removing the tank.

CAUTION

Do not attempt to make any repairs to the gas tank. Use extreme care when removing the gas tank. Do not remove tank near flame or open fire.

- Gas tank installation procedures are the reverse of removal. **NOTE:** If the original tank is not to be installed, it will be necessary to remove the gas tank outlet (5) and the attached gas line filter; also the pressure relief valve (7). These items are to be installed on the replacement tank.

To Remove Muffler

- Remove the hood and headlight assembly. Refer to Hood Removal and Installation.

CAUTION

Always disconnect the sparkplug wires before working on the engine or drive elements.

- Loosen the flexible tube clamp securing the flexible exhaust tube(s) to the muffler and release the tube. **NOTE:** On Mark XX 399 and 439 only, release the springs securing the muffler tubes to the engine exhaust manifold.

- Loosen the bolt and nut securing the muffler to the mounting band assembly. Remove the muffler.

- Installation procedures are the reverse of removal.

To Remove Bogie Wheel

CAUTION

Always disconnect the sparkplug wires before working on the engine or drive elements.

- Remove the locknut (3, figure 14) securing the bogie wheel assembly (2) to the axle shaft and remove the wheel.

- During reassembly, torque the locknut (3) to 28 foot-pounds. Be certain the wheel assembly (2) is installed with grease fittings on the outside.

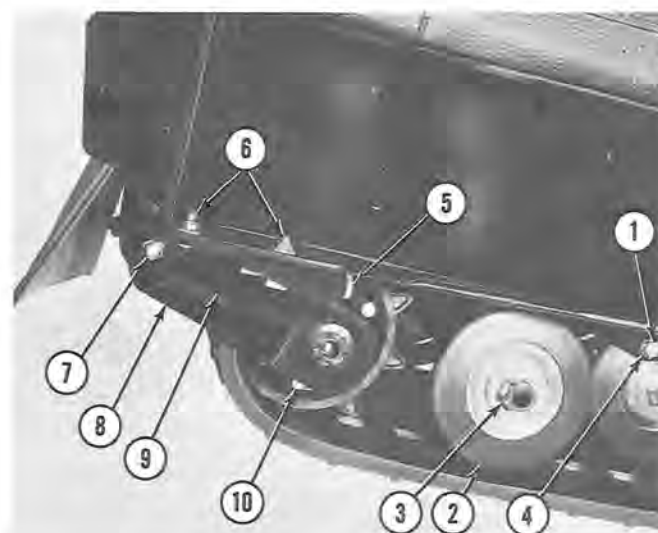


Figure 14

To Remove Bogie Wheel and Support Assembly

CAUTION

Always disconnect the sparkplug wires before working on the engine or drive elements.

- Remove the screws (1, figure 14) and lock-washers securing the bogie wheel support shaft to the main frame.

- Remove the bogie wheel and support assembly.
- Reassembly is the reverse of removal.

To Remove Bogie Wheel Torsion Springs

- Remove the bogies as described in paragraph To Remove Bogie Wheel and Support Assembly.

- Remove the support shaft and separate the bogie wheel support halves.

- Remove the torsion springs.

NOTE: The torsion springs are identified as right- and left-hand springs. Note the direction of the coils and the position of the springs to facilitate re-assembly.

- Reassembly is the reverse of removal.

To Remove Traction Belt Take-Up Assembly

- Remove the rear bogies. Refer to paragraph To Remove Bogie Wheel and Support Assembly.

- Release track tension by loosening the right- and left-hand adjusting nuts (6, figure 14) and the adjusting bolts (5).

- Release the support arm torsion springs connected to the main frame.

- Remove the right- and left-hand adjusting angle locknuts (6), washers and carriage bolts securing the traction belt take-up assembly to the main frame.

- Remove the traction belt take-up assembly as a unit.

NOTE: The traction belt take-up assembly consists of the rear sprocket assembly, spacer and associated hardware held together by the rear support arm assemblies. If necessary to remove seals or sprockets, proceed as follows.

- Carefully pry the oil seal away from the rear support arm assembly (8) and remove the support arm and adjusting angle (9) clear of the sprocket shaft and bearing.

- Remove the press-on bearings and grease seals.

- Remove the screws (10) and nuts securing the sprocket plate and the sprocket to the drive shaft. Remove the plate and sprocket.

- Reassembly is the reverse of removal. During reassembly follow instructions outlined in paragraphs Track Alignment and Track Tension Adjustment.

To Remove Sprocket Seals and Bearings

- Sprocket seals and bearings are located on each end of the traction belt take-up assembly and the drive sprocket assembly drive shafts. To replace the seals or bearings it will be necessary to remove the traction belt take-up assembly or the drive sprocket assembly as described in the applicable paragraph.

To Remove Drive Sprocket Assembly

- Remove the hood assembly and set the machine on its right-hand side.

CAUTION

Always disconnect spark plug wires before working on the engine or drive elements.

- Release the chain cover straps and remove the chain cover top.

- Remove the lower sprocket from the drive sprocket shaft and remove the sprocket and chain as described in paragraph To Remove Drive Chain.

- Using a screw driver, carefully pry the oil seals (figure 15) away from the bearings at each end of the drive shaft.

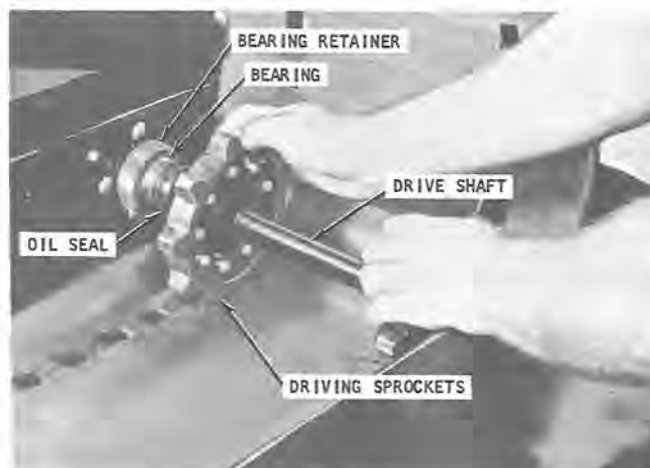


Figure 15

- Remove the carriage bolts and nuts securing the bearing retainer to the chaincase side of the main frame and remove retainer and chaincase.

- Move the drive shaft and sprocket assembly toward the chain side until the opposite end of the shaft clears the bearing retainer. Remove the drive sprocket assembly.

NOTE: When replacing the drive sprocket assembly, add No. 2 Lithium bearing grease to the sprocket bearings.

- To replace the sprockets, remove the ball bearing and oil seal. Remove the screws and nuts securing the support plate and sprocket to the drive shaft and sprocket plate assembly. Remove the sprocket.

- Reassembly is the reverse of removal. During reassembly follow instructions outlined in the paragraphs Track Tension Adjustment, Track Alignment, and Drive Chain Adjustment.

To Remove Traction Belt

- Remove the bogie assemblies. Refer to para-

graph To Remove Bogie Wheel and Support Assembly.

- Remove the traction belt take-up assembly. Refer to paragraph To Remove Traction Belt Take-Up Assembly. **NOTE:** It is not necessary to disassemble the traction belt take-up assembly when removing the traction belt.

- Remove the drive sprocket assembly. Refer to paragraph To Remove Drive Sprocket Assembly.

- Remove the traction belt.

- Reassembly is the reverse of removal. During reassembly follow instructions given in paragraphs Traction Belt Adjustment and Drive Chain Adjustment.

Traction Belt Adjustment

IMPORTANT: The traction belt must be checked regularly for proper alignment and tension. When necessary to adjust the belt, first perform the Traction Belt Alignment described below and then complete the Traction Belt Tension Adjustment procedures.

Traction Belt Alignment

- Set the snowmobile on the kickstand on a level surface.

- Stand to rear of sled and visually check the space between the frame tunnel and the edges of the traction belt. On a properly aligned track, this space should be the same.

- If the track is not centered, loosen the two locknuts (1, figure 16) on that side where the edge of the track is closest to the inside edge of the tunnel. Tighten the adjusting screw (3) until track is centered. Then tighten the locknuts (1).

- Take the sled on a short run and then recheck traction belt alignment.

- After track alignment is complete, check traction belt tension as described in the following paragraph.

Traction Belt Tension Adjustment

IMPORTANT: Always check the traction belt for proper alignment before performing the traction belt tension adjustment procedures.

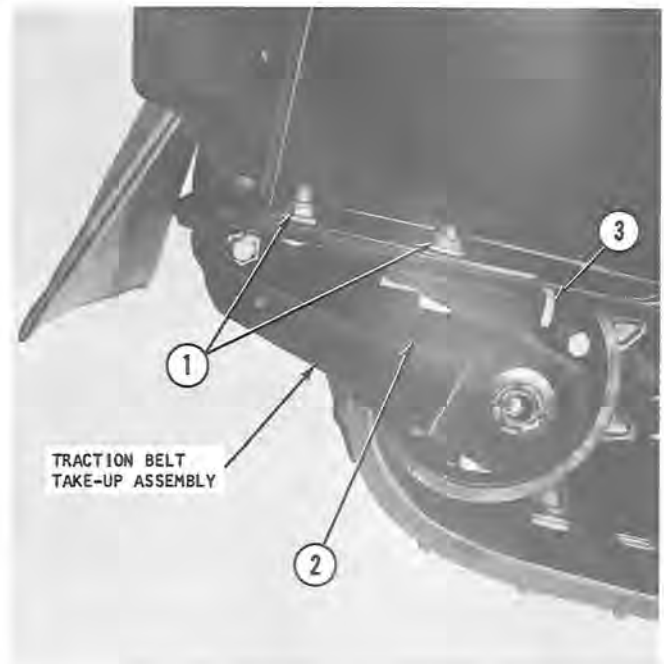


Figure 16

- Set the snowmobile on a clean, flat surface.

NOTE: A properly tensioned track should have a 1 to 1-1/4-inch sag at the approximate top center of the track. This can be determined as follows:

- Rest a straight bar (figure 17) of sufficient length along the top surface and near the edge of the track. Insert the straight bar through the back end of the snowmobile and check for proper 1 to 1-1/4-inch sag. Repeat procedure on opposite side and note the difference, if any, in the track tension.

- If adjustment is necessary, loosen the two locknuts (1, figure 16) on each side of the sled just sufficiently to allow movement of the belt-adjusting angle (2).

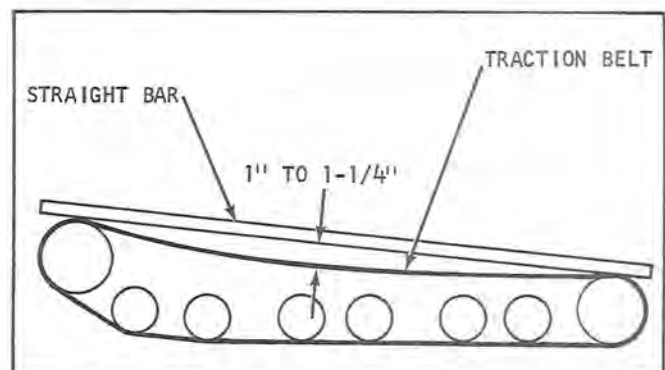


Figure 17

• Turn the adjusting screws (3) clockwise to tighten and counterclockwise to loosen until proper track tension is achieved. **IMPORTANT:** Adjust both screws (3) equally so as not to disturb the track alignment.

• Retighten the locknuts (1) on both sides of the snowmobile. Take the sled on a short run and then recheck traction belt tension.

Spark Plug Interchangeability

The following tabulation is provided to show correct spark-plug interchangeability.

Bosch	Champion	AC	Autolite	Lodge	NGK
M175T1	UK-10	M84	BZ3	HTN18	AB-6
M225T1	K-9	M83	—	—	A-7
M240T1	UK-7	—	—	—	—

Wiring Diagrams

Electrical wiring diagrams are provided for the trained technicians using this manual. Each diagram is identified with the model number of the snowmobile to which it applies.

Troubleshooting

ENGINE HARD TO START. Fuel line blocked or leaking; ruptured fuel-pump diaphragm; ignition or switch wiring loose or grounded; spark plug(s) fouled or faulty; contact breaker points pitted or burned.

ENGINE STOPS. Fuel tank empty; fuel flow obstructed; ignition system faulty. Spark plug(s) fouled or dirty. Engine too hot and pistons seizing; carburetor setting too lean or incorrect grade of oil being used.

ENGINE STOPS, FUEL TANK HALF EMPTY. Carburetor-to-tank fuel line connected incorrectly. Be certain the gas tank-to-carburetor line is connected to the inlet fitting on the carburetor.

ENGINE OPERATES IRREGULARLY. Spark plug loose, fouled or faulty; ignition switch wiring

grounded; carburetor trouble. Engine holddown bolts loose; carburetor dirty. Ignition timing off.

ENGINE WORKING FOUR-STROKE. Choke shut; carburetor settings incorrect; dirt preventing carburetor inlet needles from seating properly.

ENGINE LOSES POWER. Poor compression due to loose head and crankcase bolts. Faulty ignition; timing; piston rings sticking due to the use of improper oil. Carbon deposits in cylinder.

ENGINE BACKFIRES THROUGH CARBURETORS. Carburetor fuel-supply channel clogged.

ENGINE BACKFIRES THROUGH EXHAUST. Incorrect or faulty spark plug(s); faulty ignition coil or condenser; loose ignition wiring.

ENGINE OVERHEATS. Insufficient or incorrect grade oil in fuel mixture; carburetor or fuel line partly clogged; carburetor setting too lean; ignition timing too slow.

EXCESSIVE FUEL CONSUMPTION. Carburetor fuel line or gas tank leaking; choke closed; incorrect carburetor setting.

THROTTLE CONTROL. Excessive play in throttle control lever caused by loose throttle control cable.

STEERING. Poor steering ability caused by improperly adjusted skis; steering linkage loose or out of adjustment. U-strap bolts on roll bar too tight or too loose. Ski spring mounting bracket loose.

BRAKES. Excessive play in handbrake due to loose brake cable or worn pads.

TRACTION BELT. Poor traction; check traction belt for proper alignment and tension.

CLUTCH. Automatic clutch fails to engage at 3200 to 3700 RPM; check drive belt for proper tension.

ELECTRICAL SYSTEM. For problems involving the electrical system, check for defective wires, poor ground and loose connections.

**WIRING DIAGRAM
MARK VI 634CC (SD15M21A)**

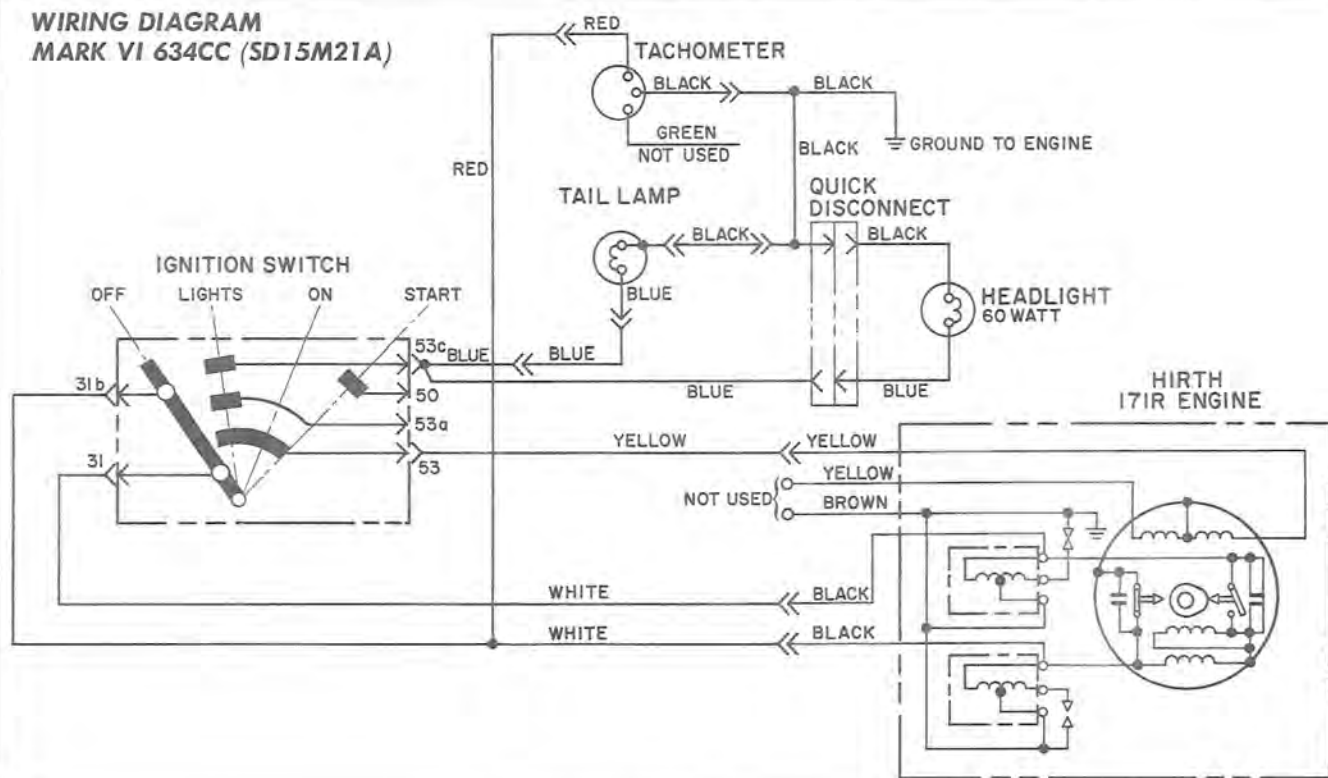


Figure 18

**WIRING DIAGRAM
MARK XX 295 (SDM1511A)**

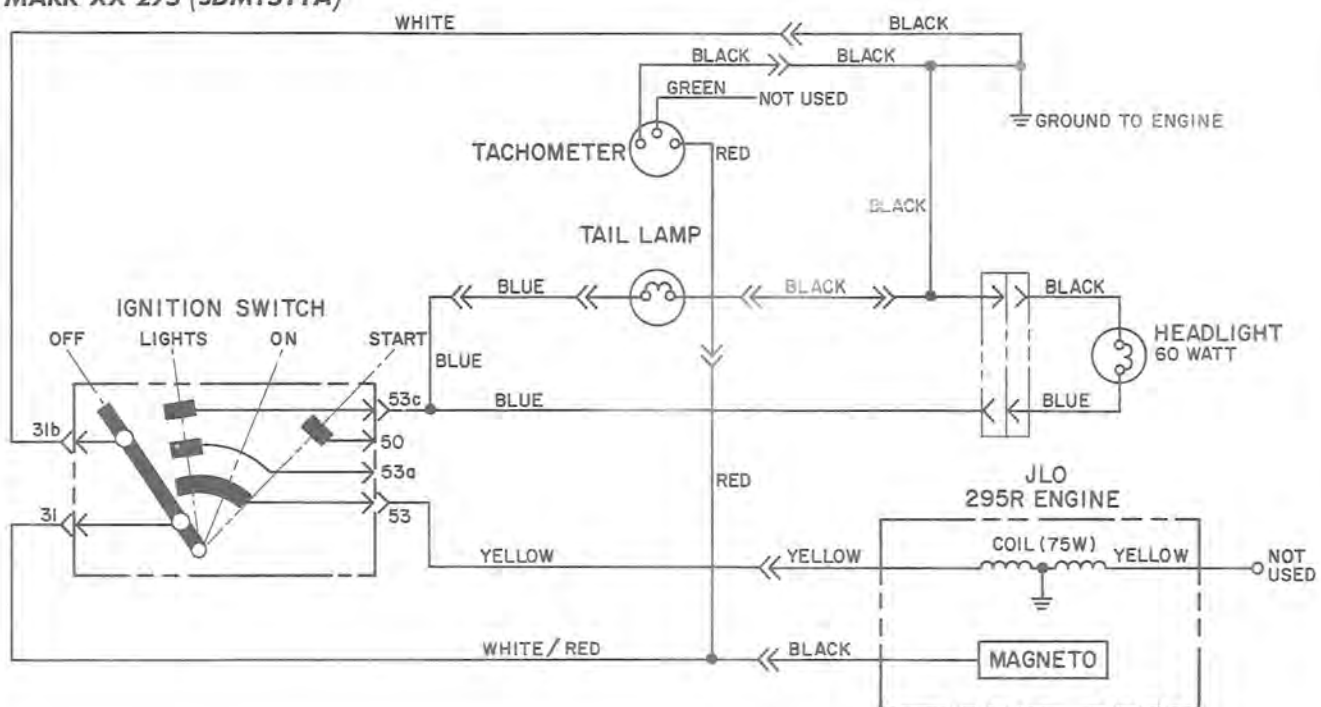


Figure 19

WIRING DIAGRAM

MARK XX 399CC (SD15M22A)

MARK XX 439CC (SD15M23A)

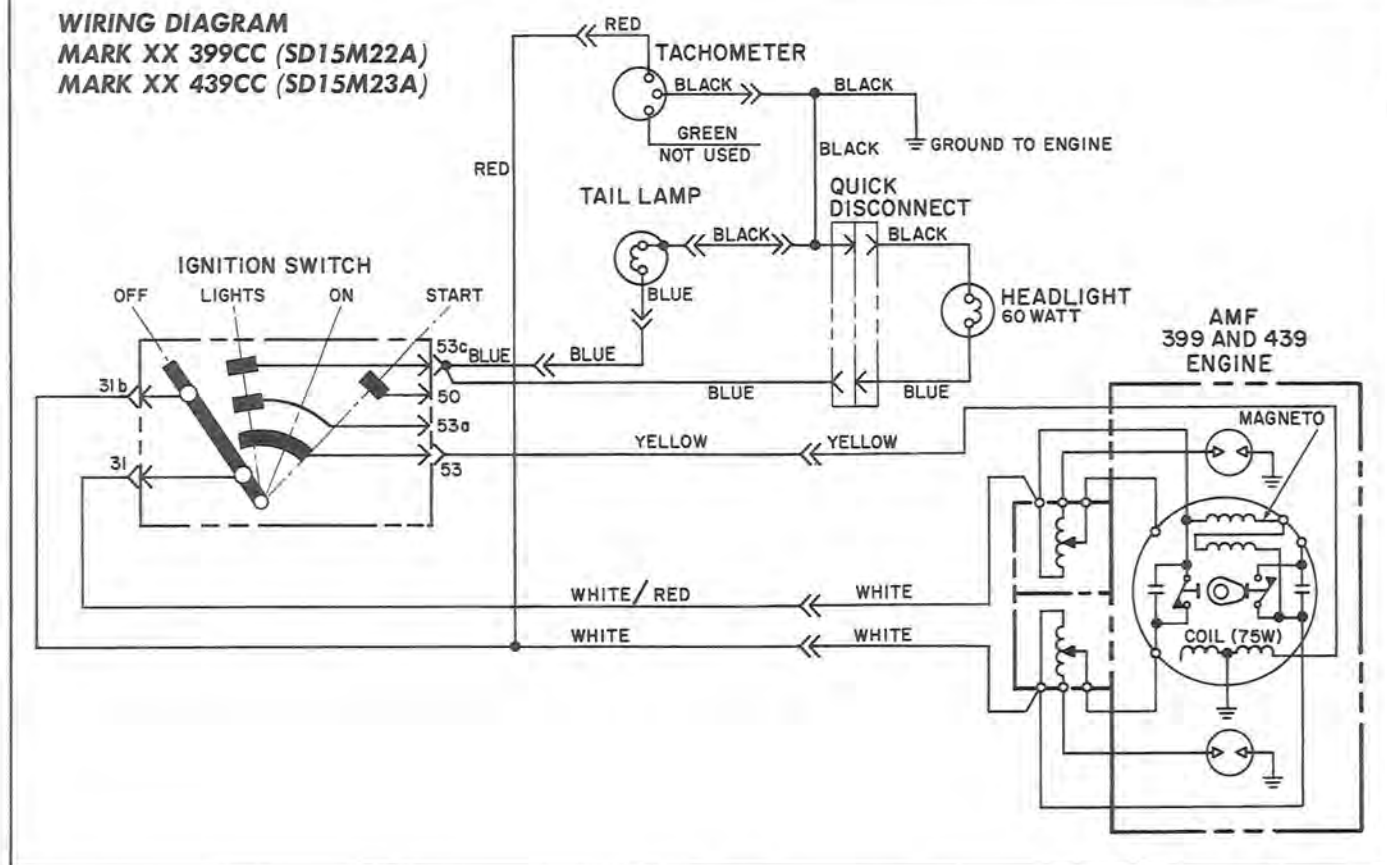


Figure 20



CHANGE NOTICE

The following pages have been revised or added to the Illustrated Parts List Section of the 1970 Parts and Service Manual covering the Mark VI and Mark XX Series Ski-Daddlers.

Page No.

3	Revised
13	Revised
15	Revised
17	Revised
18	Revised
19	Revised
25	Revised
26	Added
27	Added
28	Added

Please remove and discard the original pages and replace them with the revised pages dated 15 January 1970.

Figure 1. Sheet 3 of 3

Figure & Index Number	Part Number	Description	Qty
1-	37532	BOGIE ASSEMBLY (Used on Mk XX 399 and Mk XX 439, see figure 10)	3
-32	181595	SCREW, Hex HD, 5/16-24 by 3/4	6
-33	138485	LOCKWASHER, 5/16 ID	6
-34	37450	DRIVEN CLUTCH AND MOUNTING ASSEMBLY (Used on Mk VI only, see figure 11)	1
	37642	DRIVEN CLUTCH AND MOUNTING ASSEMBLY (Used on Mk XX 295 only, see figure 11)	1
	37643	DRIVEN CLUTCH AND MOUNTING ASSEMBLY (Used on Mk XX 399 only, see figure 11)	1
	37881	DRIVEN CLUTCH AND MOUNTING ASSEMBLY (Used on Mk XX 439 only, see figure 11)	1
-35	181643	BOLT, Hex HD, 3/8-24 by 1-1/2	2
-36	120382	LOCKWASHER, 3/8 ID	2
-37	37310	DRIVE SPROCKET ASSEMBLY (See figure 11)	1
-38	34960	BELT, Traction	1
-39	37453	MAIN FRAME ASSEMBLY (Used on Mk VI only)	1
	37637	MAIN FRAME ASSEMBLY (Used on Mk XX 295 only)	1
	37638	MAIN FRAME ASSEMBLY (Used on Mk XX 399 and Mk XX 439 only)	1

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Figure 2. Sheet 1 of 3

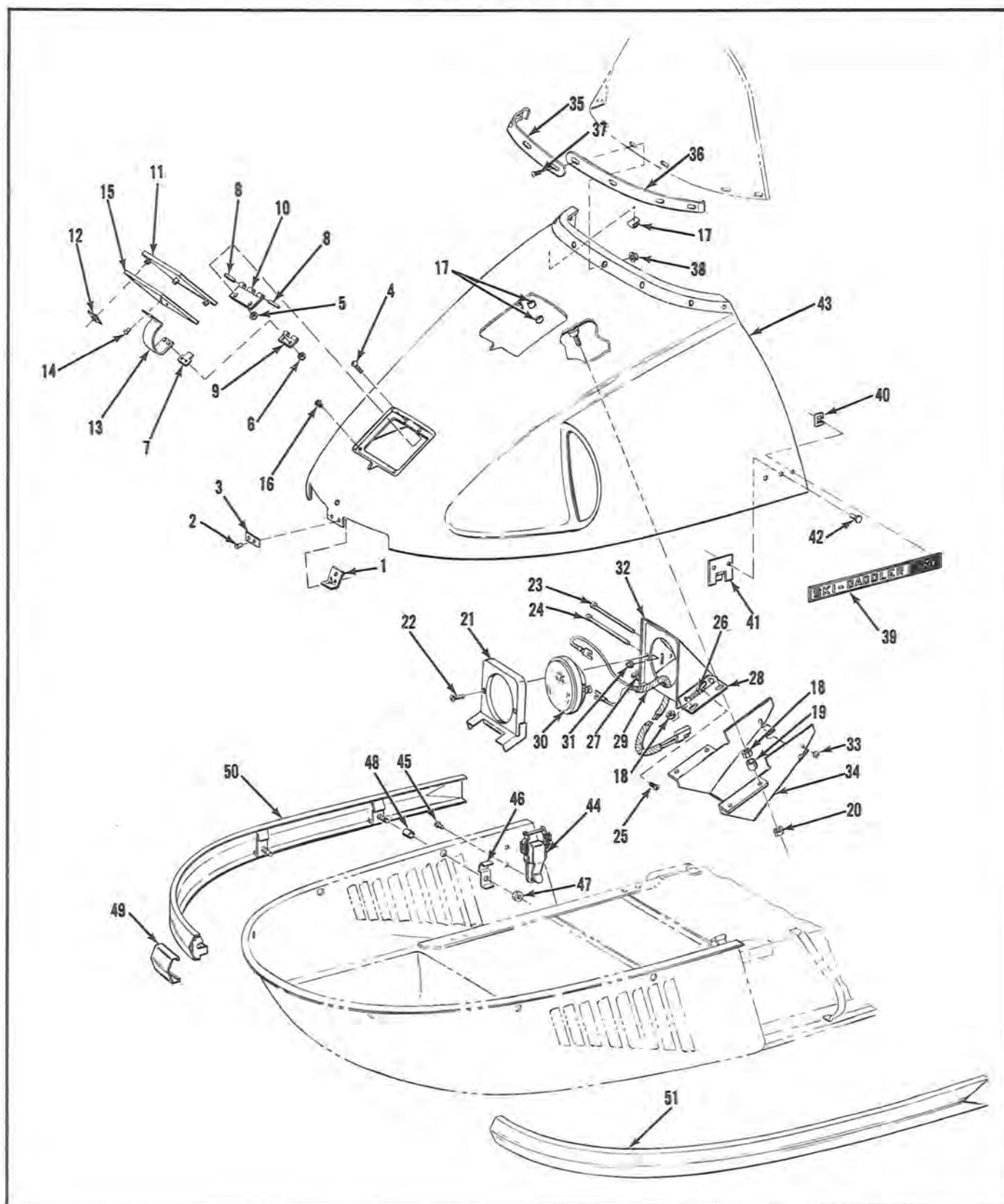


Figure 5. Sheet 1 of 3

Figure & Index Number	Part Number	Description	Qty
5-1	37701	HEAT SHIELD ASSEMBLY (Used on Mk VI only)	1
-2	123316	BOLT, Hex HD, 1/4-28 by 1/2	1
-3	37655	MOUNTING BRACKET, Heat shield	1
-4	178451	SCREW, Hex HD, 10-32 by 3/8	2
-5	9000122	LOCKNUT, 10-32	2
-6	34032	BAND ASSEMBLY, Muffler	1
-7	181595	SCREW, Hex HD, 5/16-24 by 3/4	2
-8	120393	WASHER, Plain, 11/32 ID, 11/16 OD	4
-9	9000124	LOCKNUT, 5/16-24	2
-10	32588	CLAMP, Flexible tube	4
-11	37572	MUFFLER	1
-12	37570	EXHAUST TUBE, Flexible	1
-13	37578	EXHAUST TUBE, Flexible	1
	37456	ENGINE AND SUPPORT ASSEMBLY (Used on Mk VI only, see figure 1)	REF
-14	37586	EXHAUST MANIFOLD	1
-15	37575	EXHAUST MANIFOLD	1
-16	455513	PIN, Spring, 3/32 by 1/2	5
-17	34687	PIVOT PIN, Throttle	1
-18	34842	CARBURETOR ADAPTER ARM ASSEMBLY	3
-19	30640	SCREW	3
-20	30639	SWIVEL BUTTON	3
-21	30637	WASHER	3
-22	34836	ADAPTER ARM, Carburetor	3
-23	34833	LINKAGE PIN, Throttle	2
-24	37861	BRACKET ASSEMBLY, Throttle	1
-25	431942	SCREW, Hex HD, 10-32 by 1/2	2
-26	9000122	LOCKNUT, 10-32	2
-27	34841	BRACKET, Throttle	1
-28	431942	SCREW, Hex HD, 10-32 by 1/2	2
-29	9000122	LOCKNUT, 10-32	2
-30	34878	CLAMP, Hose	4
-31	37482	IMPULSE LINE	2
-32	37744	ELBOW, Impulse line, 90-degree	2
-33	37481	IMPULSE LINE	2
-34	37164	ENGINE WIRING CONNECTIONS	1
-35	33829	CARBURETOR	2
-36	34866	GASKET	2
-37	34863	CARBURETOR ADAPTER KIT, Consists of plate (P/N 34868), plate (P/N 34869), gasket (P/N 34870), four screws (10-24 by 3/4), four internal-tooth washers (no. 10), two studs (3/8-16 by 1-1/4) and two nuts (3/8-16)	2
-38	34865	GASKET	2
-39	34845	SPACER	2
-40	34846	STUD, 8-MM by 2	4
-41	34779	DRIVE CLUTCH ASSEMBLY (See figure 12)	1
-42	191769	BOLT, Hex HD, 1/2-20 by 5-1/2	1
-43	138549	LOCKWASHER, Internal tooth, 1/2	1
-44	34840	SPACER, Clutch	1
-45	37479	FRAME, Engine mounting	1
-46	180175	BOLT, Hex HD, 1/2-13 by 1-1/4	4
-47	120384	LOCKWASHER, 1/2	4

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Figure 5. Sheet 2 of 3

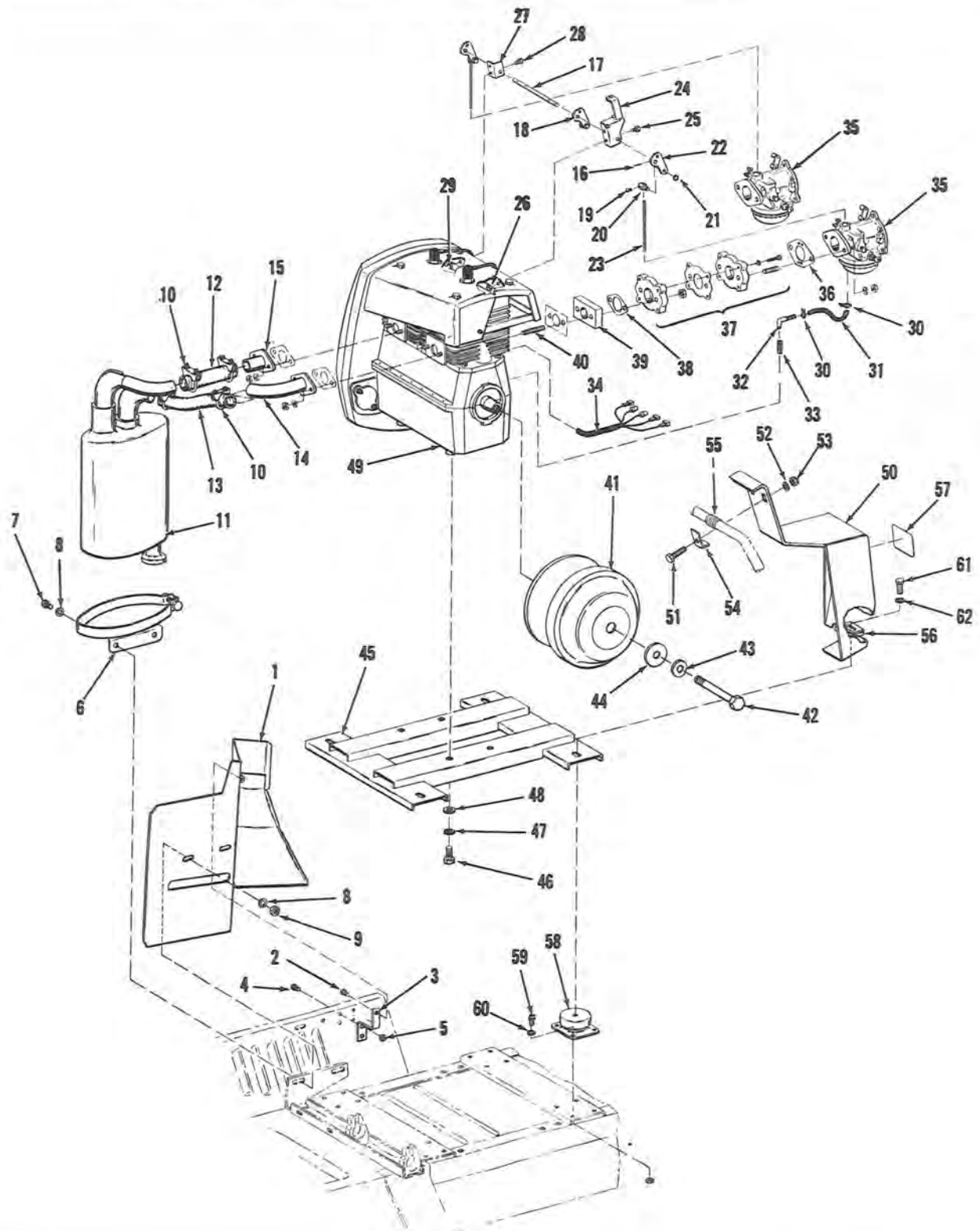


Figure 5. Sheet 3 of 3

Figure & Index Number	Part Number	Description	Qty
5-48	9415543	WASHER, Plain, 1/2	4
-49	34357	ENGINE, 634cc	1
-50	37516	GUARD, Clutch	1
-51	181577	BOLT, Hex HD, 1/4-28 by 1-3/4	2
-52	147579	WASHER, Plain, 1/4	2
-53	9000123	LOCKNUT, 1/4-28	2
-54	34704	STRAP, Clutch guard	2
-55	37636	PAD	1
-56	37868	PAD, Clutch guard, lower	1
-57	37593	DECAL, Safety	1
-58	37464	SHOCK MOUNT	4
-59	225842	SCREW, Soc HD, 10-32 by 1/2	16
-60	120217	LOCKWASHER, No. 10	16
-61	180022	SCREW, Hex HD, 1/4-20 by 1	4
-62	120380	LOCKWASHER, 1/4	4

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Figure 6. Sheet 1 of 2

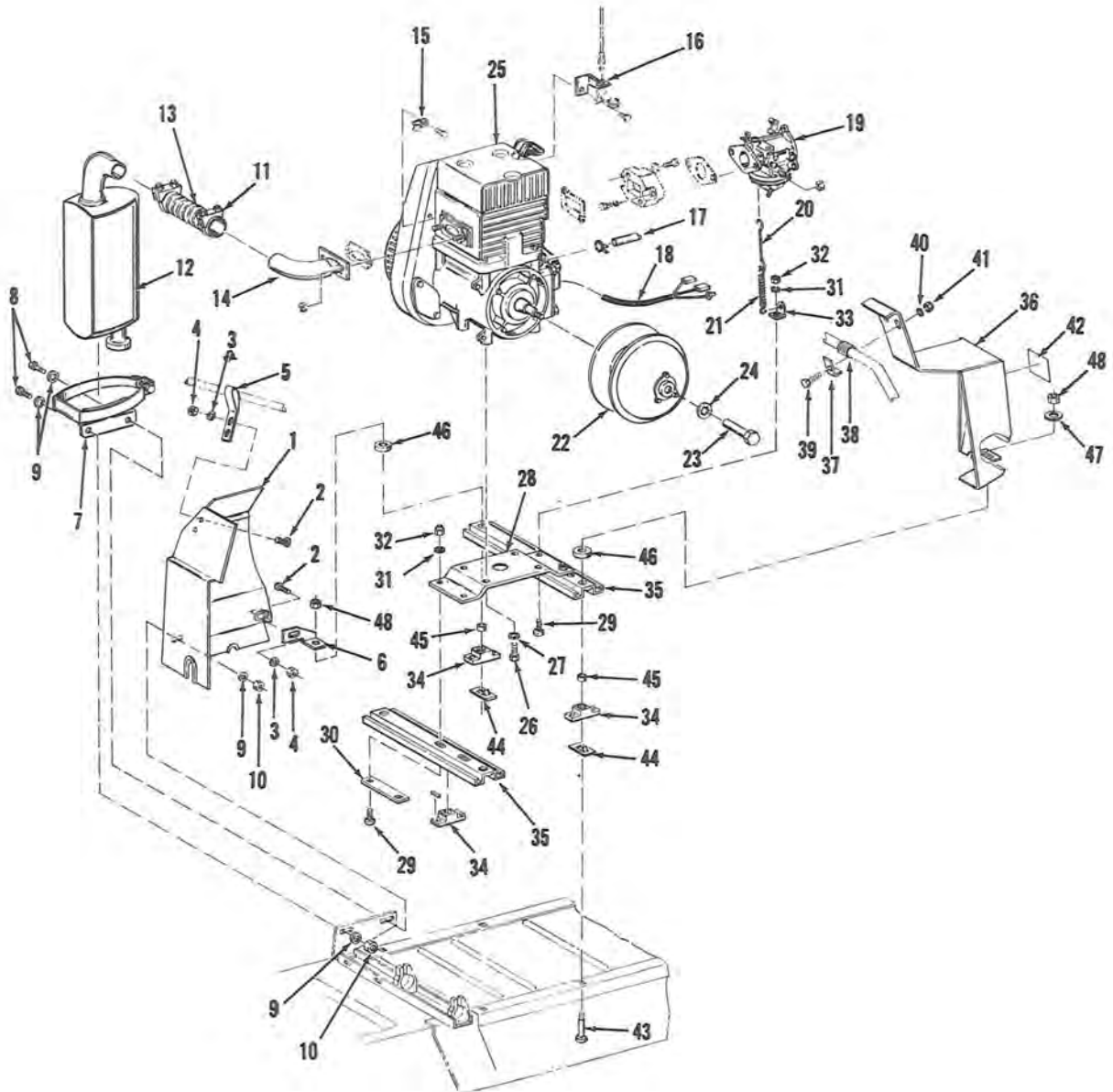
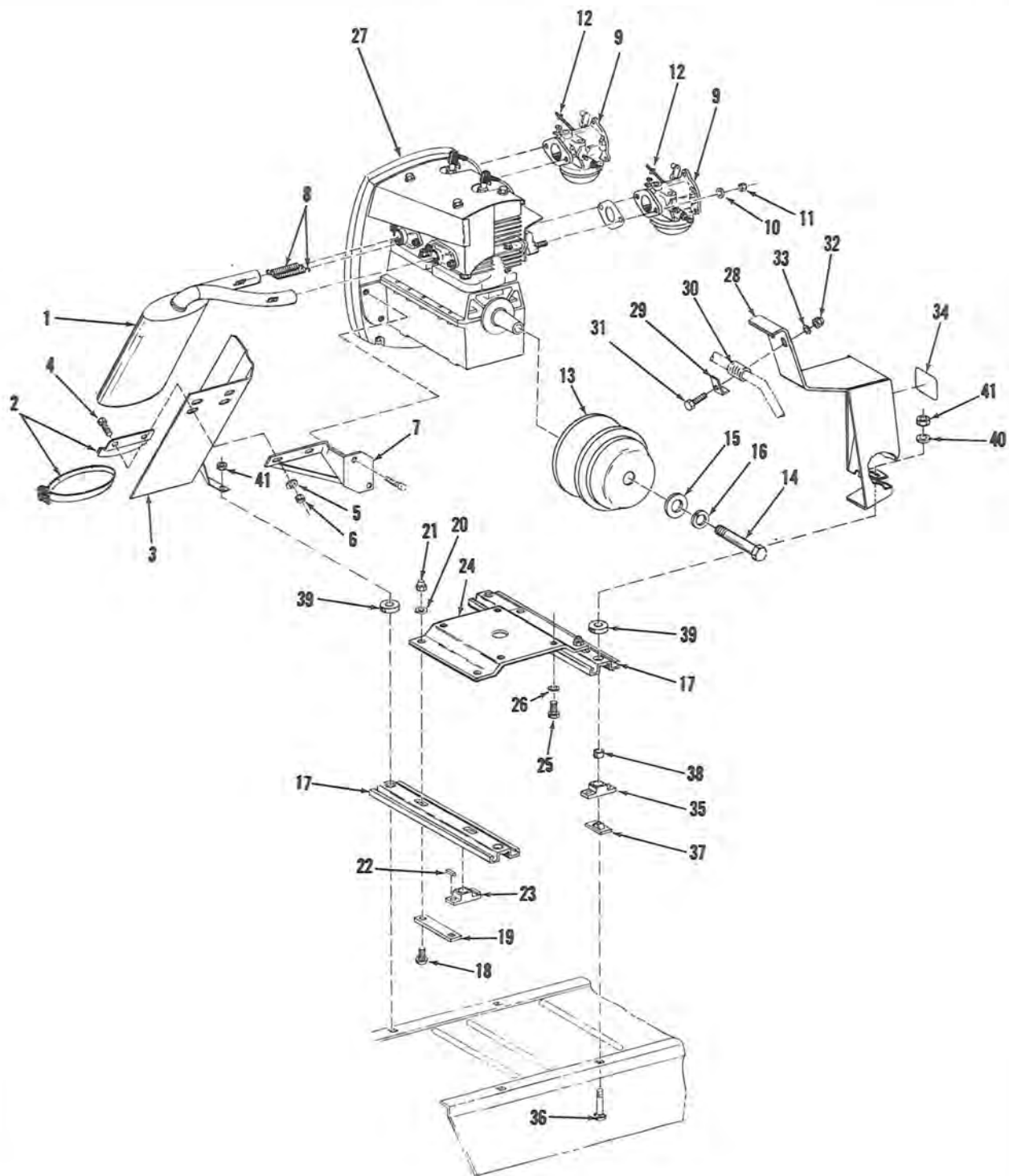


Figure 6. Sheet 2 of 2

Figure & Index Number	Part Number	Description	Qty
6-1	37582	HEAT SHIELD ASSEMBLY (Used on Mk XX 295 only)	1
-2	9000302	SCREW, Truss HD, 1/4-28 by 5/8	3
-3	120392	WASHER, Plain, 1/4	3
-4	9000123	LOCKNUT, 1/4-28	3
-5	37345	SUPPORT, Heat shield	1
-6	37344	BRACKET, Heat shield	1
-7	37867	BAND ASSEMBLY	1
-8	181595	SCREW, Hex HD, 5/16-24 by 3/4	2
-9	120393	WASHER, Plain, 11/32 ID by 11/16 OD	4
-10	9000124	LOCKNUT, 5/16-24	2
-11	32588	CLAMP, Flexible tube	2
-12	37694	MUFFLER	1
-13	37570	EXHAUST TUBE, Flexible	1
	37538	ENGINE AND SUPPORT ASSEMBLY (Used on Mk XX 295 only, see figure 1)	REF
-14	37689	PIPE, Engine exhaust	1
-15	2791	CLIP	1
-16	37598	BRACKET, Throttle	1
-17	30270	IMPULSE LINE, 3/16 ID, 5/16 OD by 7	1
-18	37225	WIRING CONNECTIONS	1
-19	33829	CARBURETOR	1
-20	37402	HOOK, Spring	1
-21	37399	EXTENSION SPRING, Throttle	1
-22	37512	DRIVE CLUTCH ASSEMBLY (See figure 14)	1
-23	191695	BOLT, Hex HD, 1/2-20 by 4-3/4	1
-24	125793	LOCKWASHER, 3/16	1
-25	37138	ENGINE, 295R	1
-26	180147	BOLT, Hex HD, 7/16-14 by 1-1/4	4
-27	120383	LOCKWASHER, 7/16	4
-28	37188	BASE, Engine	1
-29	9000323	BOLT, Carriage, 5/16-24 by 1	4
-30	37189	BAR WASHER	2
-31	120393	WASHER, Plain	4
-32	9000124	LOCKNUT, 5/16-24	4
-33	37400	RETAINER, Spring	1
-34	33768	SHOCK MOUNT	1
-35	37540	MOUNTING STRAP	2
-36	37690	CLUTCH GUARD	1
-37	34704	STRAP, Clutch guard	2
-38	37636	PAD	1
-39	181577	BOLT, Hex HD, 1/4-28 by 1-3/4	2
-40	147579	WASHER, 1/4 ID	2
-41	9000123	LOCKNUT, 1/4-28	2
-42	37593	DECAL, Safety	1
-43	9000324	BOLT, Carriage, 3/8-24 by 2-1/4	4
-44	32532	NUT, Tinnerman	4
-45	32528	BUSHING	4
-46	33769	SPACER	4
-47	37595	WASHER, 13/32 ID, 1-1/2 OD	3
-48	9000125	LOCKNUT, 3/8-24	4

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Figure 7. Sheet 1 of 2



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Figure 7. Sheet 2 of 2

Figure & Index Number	Part Number	Description	Qty
7-1	37732	MUFFLER (Used on Mk XX 399 and Mk XX 439 only)	1
-2	34032	BAND ASSEMBLY	1
-3	37882	HEAT SHIELD ASSEMBLY	1
-4	181595	SCREW, Hex HD, 5/16-24 by 3/4	2
-5	120393	WASHER, Plain	4
-6	9000124	LOCKNUT, 5/16-24	2
-7	37884	MUFFLER BRACKET	1
-8	35029	SPRING	4
	38219	ENGINE AND SUPPORT ASSEMBLY (Used on Mk XX 399 only) ..	REF
	38227	ENGINE AND SUPPORT ASSEMBLY (Used on Mk XX 439 only) ..	REF
-9	38228	CARBURETOR	2
-10	138538	LOCKWASHER, Internal tooth, 5/16 ID	4
-11	124920	JAM NUT, 5/16-24	4
-12	38200	SCREW, Throttle rod	2
-13	37870	DRIVE CLUTCH ASSY (Used on Mk XX 399 only, see figure 14)....	1
	37130	DRIVE CLUTCH ASSY (Used on Mk XX 439 only, see figure 16)....	1
-14	191695	BOLT, Hex HD, 1/2-20 by 4-3/4 (Used on Mk XX 399 only)	1
	189348	BOLT, Hex HD, 1/2-20 by 5 (Used on Mk XX 439 only)	1
-15	37869	SPACER, Clutch (Used on Mk XX 399 only)	1
-16	180447	LOCKWASHER, Internal tooth (used on Mk XX 399 only)	1
	120384	LOCKWASHER, Spring, 1/2 (used on Mk XX 439 only)	1
-17	37596	MOUNTING STRAP	2
-18	9000323	BOLT, Carriage, 5/16-24 by 1/2	4
-19	37126	WASHER, Bar	2
-20	120393	WASHER, Plain, 5/16 ID	4
-21	9000124	LOCKNUT, 5/16-24	4
-22	37699	PAD, Shock mount	2
-23	33768	SHOCK MOUNT	1
-24	37118	ENGINE, Base	1
-25	180175	BOLT, Hex HD, 1/2-13 by 1-1/4	4
-26	120384	LOCKWASHER, 1/2 ID	4
-27	38216	ENGINE ASSEMBLY (Used on Mk XX 399 only)	1
	38224	ENGINE ASSEMBLY (Used on Mk XX 439 only)	1
-28	37738	CLUTCH GUARD	1
-29	34704	STRAP, Clutch guard	2
-30	37636	PAD	1
-31	181577	BOLT, Hex HD, 1/4-28 by 1-3/4	2
-32	147579	WASHER	2
-33	9000123	LOCKNUT, 1/4-28	2
-34	37593	DECAL, Safety	1
-35	33768	SHOCK MOUNT	4
-36	9000324	BOLT, Carriage, 3/8-24 by 2-1/4	4
-37	32532	NUT, Tinnerman	4
-38	32528	BUSHING	4
-39	33769	SPACER, Rubber	4
-40	37595	WASHER, 13/32 ID, 1-1/2 OD	3
-41	9000125	LOCKNUT, 3/8-24	4

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Figure 8. Sheet 1 of 1

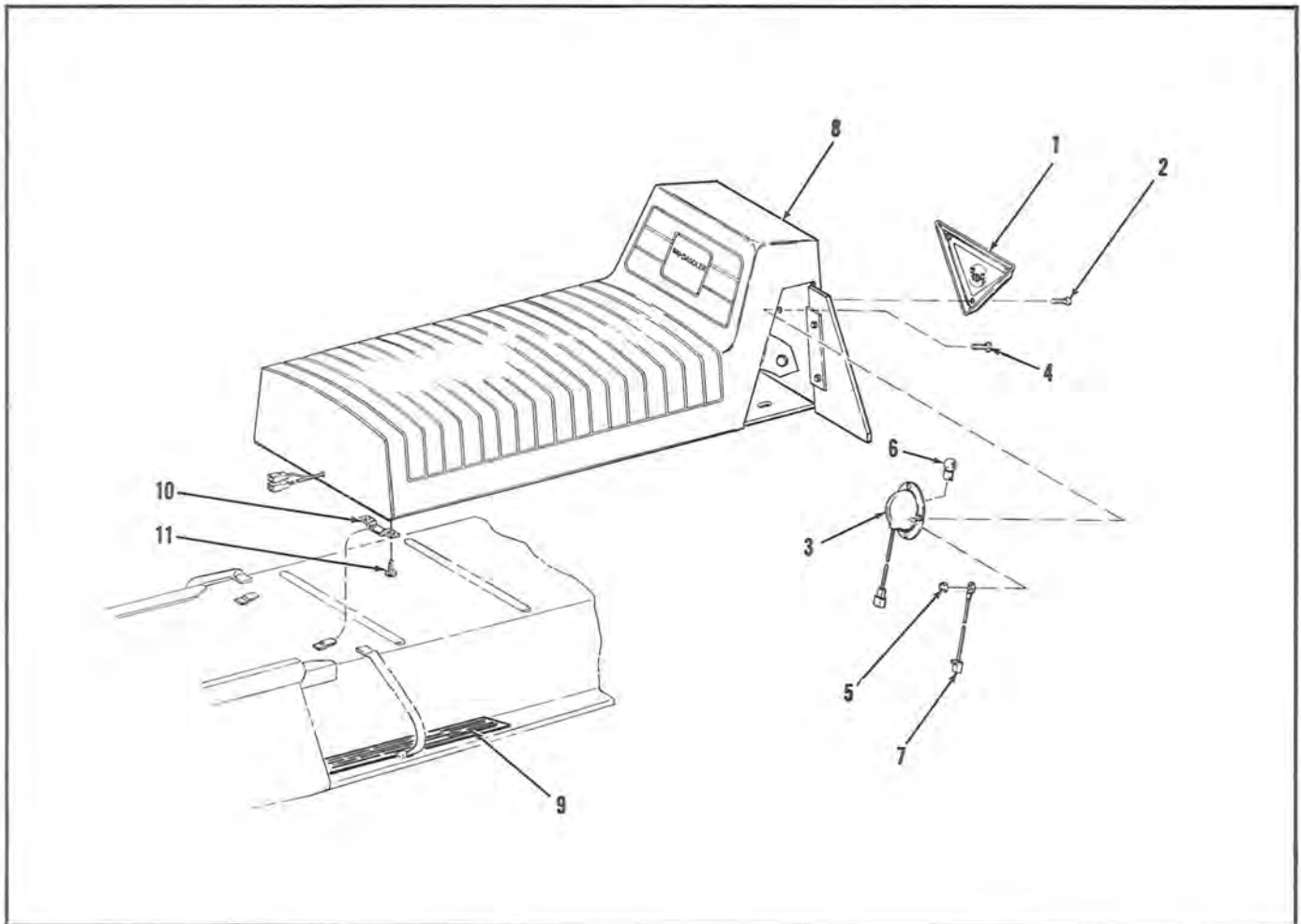


Figure & Index Number	Part Number	Description	Qty
8-	37465	SEAT AND TAILLIGHT ASSEMBLY (Used on Mk VI and Mk XX series, see figure 1)	REF
-1	33583	LENS, Taillamp	1
-2	134182	SCREW, Oval HD, 6-32 by 7/8	3
-3	37431	BODY, Taillamp	1
-4	436751	SCREW, Pan HD, 10-32 by 5/8	2
-5	9000122	LOCKNUT, 10-32	2
-6	33584	BULB, Taillamp, 12-volt	1
-7	37466	WIRE, Ground	1
-8	37379	SEAT, Racer	1
-9	30228	FOOT PAD	2
-10	33395	RECEPTACLE, Seat clip	2
-11	144815	SCREW, Pan HD, self-tapping	4

Figure 11. Sheet 3 of 3

Figure & Index Number	Part Number	Description	Qty
11-35	37450	DRIVEN CLUTCH AND SHAFT ASSEMBLY (Used on Mk VI only, see figure 13)	1
	37513	DRIVEN CLUTCH AND SHAFT ASSEMBLY (Used on Mk XX 295 and Mk XX 399 only, see figure 15)	1
	34968	DRIVEN CLUTCH AND SHAFT ASSEMBLY (Used on Mk XX 439 only, see figure 17)	1
-36	34925	DRIVEN CLUTCH MOUNTING	1
-37	37253	WASHER, Serrated	1
-38	9000124	LOCKNUT, 5/16-24	1
-39	34826	RING, Retaining	1
-40	273938	PIN, Spring	2
-41	34950	CAM, Right side	1
-42	34952	CAM, Left side	1
-43	9417098	WASHER, Plain, 17/32 ID, 1 OD	1
-44	34965	SHAFT, Clutch mounting	1
-45	37024	BEARING RETAINER AND PLATE ASSEMBLY	2
-46	9000326	BOLT, Carriage, 5/16-24 by 7/8	3
-47	9000321	BOLT, Carriage, 5/16-24 by 5/8	3
-48	9000124	LOCKNUT, 5/16-24	6
-49	37294	BUSHING, Chain cover	3
	37287	CHAIN COVER BOTTOM ASSEMBLY	1
-50	37289	BRACKET, Chain cover	4
-51	37251	RIVET	8
-52	37288	CHAIN COVER, Bottom	1
	37310	DRIVE SPROCKET ASSEMBLY (See figure 1)	REF
-53	34648	BEARING	2
-54	30079	SEAL, Grease	2
-55	37192	SPROCKET SUPPORT PLATE ASSEMBLY	2
-56	181566	SCREW, 1/4-28 by 3/4	18
-57	9000123	LOCKNUT, 1/4-28	18
-58	33659	SPROCKET, Drive	2
-59	37436	DRIVE SHAFT AND PLATE ASSEMBLY	1

Revised 15 January 1970

Figure 12. Sheet 1 of 1

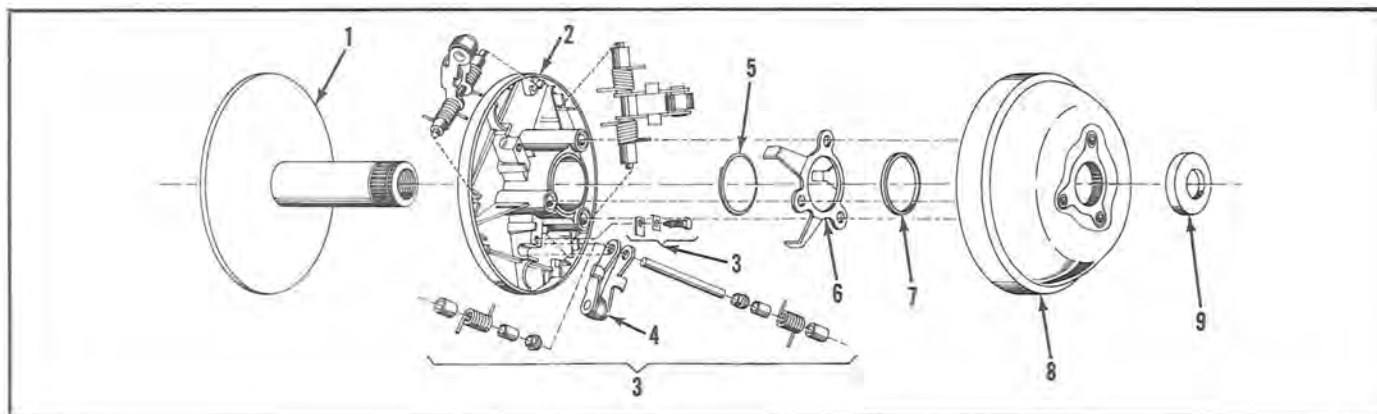


Figure & Index Number	Part Number	Description	Qty
12-	34779	DRIVE CLUTCH ASSEMBLY (Used on Mk VI only, see figure 5)	REF
-1	37927	FIXED FACE AND HUB ASSEMBLY	1
-2	37899	MOVABLE FACE ASSEMBLY (Includes items 3 and 4)	1
-3	37900	SERVICE KIT (Includes springs, pins and bushing)	1 set
-4	37901	ROLLER ARM ASSEMBLY	1 set
-5	37902	RING, Retaining	1
-6	37903	RETRACTOR, Movable face	1
-7	37904	SPACER	1
-8	37905	RAMP PLATE	1
-9	37906	CUP WASHER	1

Figure 13. Sheet 1 of 1

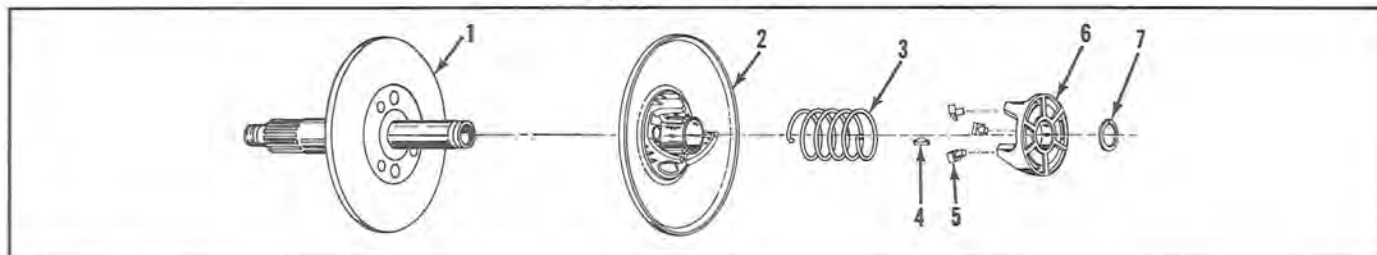


Figure & Index Number	Part Number	Description	Qty
13-	37450	DRIVEN CLUTCH AND SHAFT ASSEMBLY (Used on Mk VI only, see figure 11)	REF
-1	37908	FIXED FACE AND HUB ASSEMBLY	1
-2	37909	MOVABLE FACE ASSEMBLY	1
-3	37602	SPRING	1
-4	36603	KEY, Morton Hi-Pro	1
-5	37604	BUTTON, Shoe ramp	3
-6	37609	TORQUE BRACKET ASSEMBLY (Includes item 5)	1
-7	37610	RING, Retaining	1

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Figure 14, Sheet 1 of 1

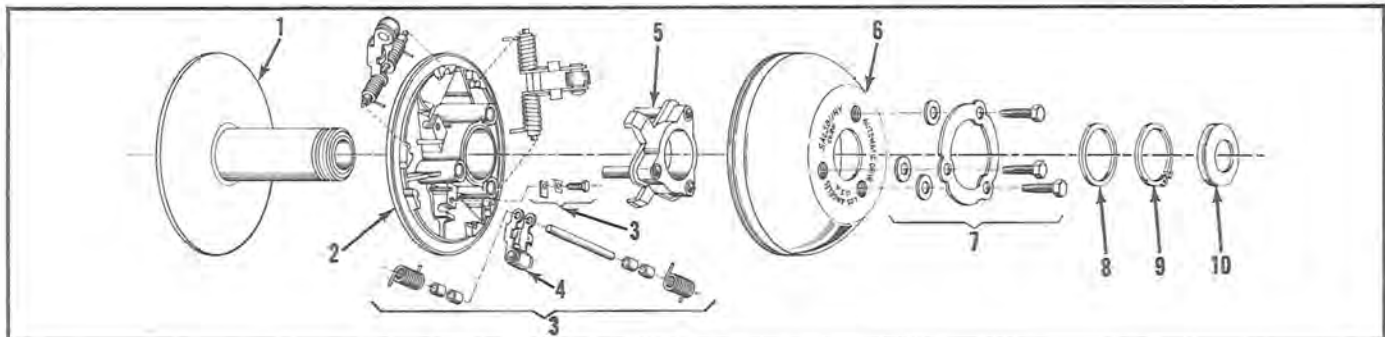


Figure & Index Number	Part Number	Description	Qty
14-	37512	DRIVE CLUTCH ASSEMBLY (Used on Mk XX 295 only, see figure 6)	REF
	37870	DRIVE CLUTCH ASSEMBLY (Used on Mk XX 399 only, see figure 7)	REF
-1	37611	FIXED FACE AND HUB ASSEMBLY	1
-2	37928	MOVABLE FACE ASSEMBLY (Used on Mk XX 295 only)	1
	37931	MOVABLE FACE ASSEMBLY (Used on Mk XX 399 only)	1
-3	37929	SERVICE KIT (Includes springs, pins, bushings, screw, clamp and retaining clip)	1 set
-4	37624	SERVICE KIT, Roller arm assembly (used on Mk XX 295 only)	1 set
	37614	SERVICE KIT, Roller arm assembly (used on Mk XX 399 only)	1 set
-5	37615	SPIDER AND PIN ASSEMBLY	1
-6	37930	RAMP PLATE	1
-7	37618	SERVICE KIT (Includes screws, washers and lock plate)	1
-8	37617	SPACER	1
-9	37619	RING, Retaining	1
-10	37620	CUP WASHER	1

Figure 15, Sheet 1 of 1

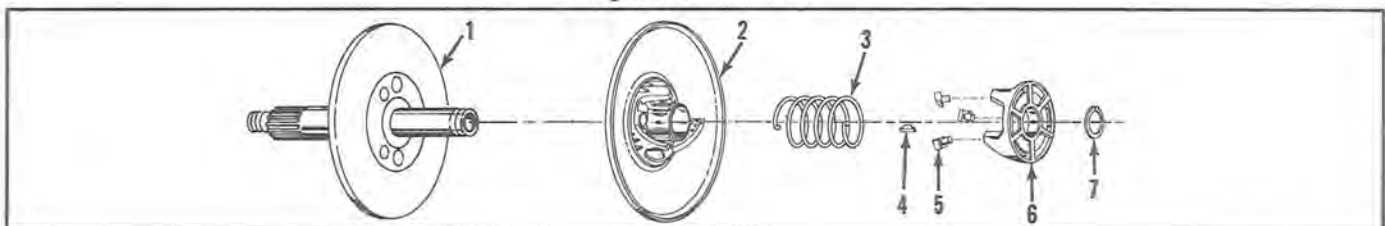


Figure & Index Number	Part Number	Description	Qty
15-	37513	DRIVEN CLUTCH AND SHAFT ASSEMBLY (Used on Mk XX 295 and 399 only, see figure 11)	REF
-1	37607	FIXED FACE AND HUB ASSEMBLY	1
-2	37608	MOVABLE FACE ASSEMBLY	1
-3	37602	SPRING	1
-4	37603	KEY, Morton Hi-Pro	1
-5	37604	BUTTON, Shoe ramp	3
-6	37609	TORQUE BRACKET ASSEMBLY (Includes item 5)	1
-7	37610	RING, Retaining	1

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Figure 16. Sheet 1 of 1

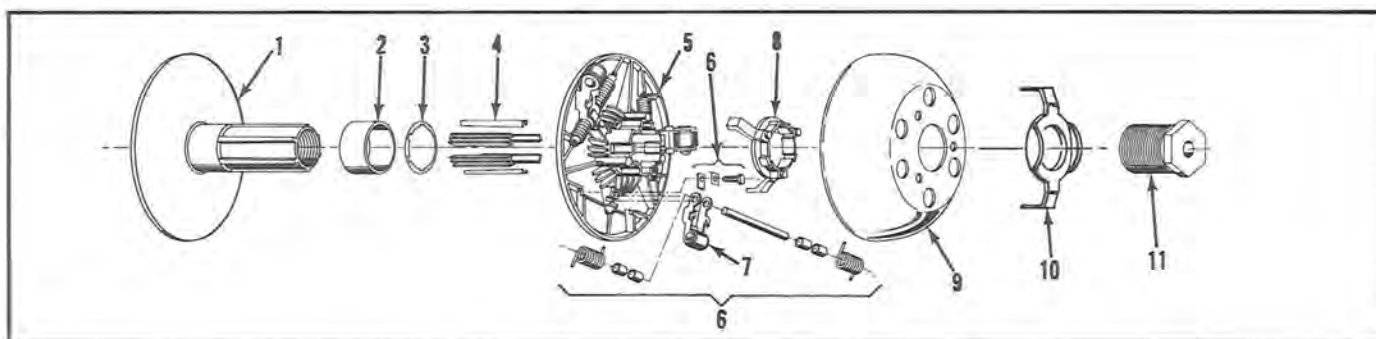


Figure & Index Number	Part Number	Description	Qty
16-	37130	DRIVE CLUTCH ASSEMBLY (Used on Mk XX 439 only, see figure 7)	REF
-1	37712	FIXED FACE ASSEMBLY	1
-2	37713	BEARING, Idler	1
-3	37714	WASHER, Idler bearing	1
-4	37715	LINER, Spline	6
-5	37716	MOVABLE FACE ASSEMBLY (Includes items 6 and 7)	1
-6	37631	SERVICE KIT (Includes spring, pins and bushing)	1 set
-7	37717	ROLLER ARM ASSEMBLY	1 set
-8	37718	SPIDER	1
-9	37934	RAMP PLATE ASSEMBLY (Includes item 10)	1
-10	37944	LOCK PLATE	1
-11	37936	NUT	1

Figure 17. Sheet 1 of 1

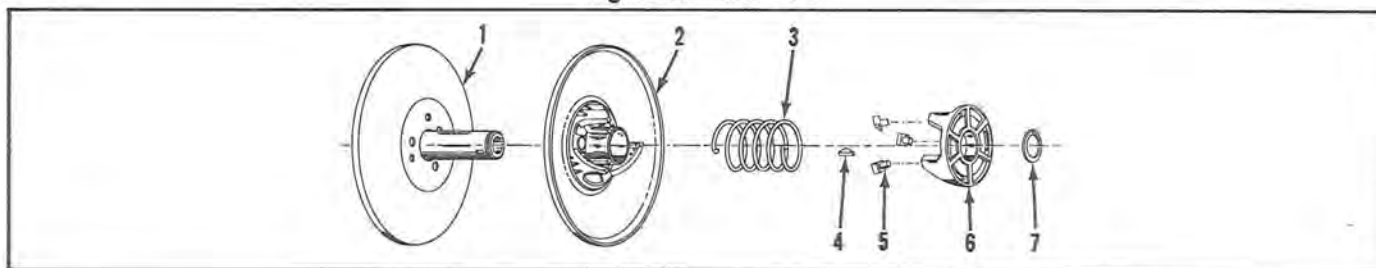


Figure & Index Number	Part Number	Description	Qty
17-	34968	DRIVEN CLUTCH AND SHAFT ASSEMBLY (Mk XX 439 only, see figure 11)	REF
-1	37722	FIXED FACE AND HUB ASSEMBLY	1
-2	37933	MOVABLE FACE ASSEMBLY	1
-3	37602	SPRING	1
-4	37603	KEY, Morton Hi-Pro	1
-5	37604	BUTTON, Shoe ramp	3
-6	37609	TORQUE BRACKET ASSEMBLY (Includes item 5)	1
-7	37610	RING, Retaining	1